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TITLE : RAW MATERIAL ALLOY FOR PRODUCING RARE EARTH MAGNET POWDER AND PRODUCTION OF RARE EARTH MAGNET POWDER USING THIS RAW MATERIAL ALLOY

ABSTRACT : PROBLEM TO BE SOLVED: To obtain a raw material alloy producing rare earth magnet powder having excellent magnetic properties by composing the intergranular precipitates of a raw material alloy in which the componental compsn. and structure are specified of intermetallic compound phases and boride phases.

SOLUTION: A raw material alloy for producing rare earth magnet powder having a compsn. contg., by at.%, 10.0 to 16.0% rare earth element including Y (R), 5.0 to 30.0% Co or Ni (T), 4.0 to 10.0% B, one or more kinds among Zr, Hf, Ti and Ni (M1) by 0.001 to 3.0% one or more kinds among Ga, Al and Sn (M2) by 0.001 to 5.0%, and the balance Fe with inevitable impurities and consisting of the main phases composed of $R_2(Fe, T)_{14}B$ type intermetallic compound phases in which M1 and M2 are partially allowed to enter into solid solutions and intergranular precipitates precipitated into the boundaries of the crystal grains thereof is prepd. This intergranular precipitates are composed of $R_a(Fe, T)_{100-a}$ intermetallic compound phases, R_bT_{100-b} intermetallic compound phases, $M1_cB_{100-c}$ boride phases, $R_dT_eM2_{100-(d+e)}$ intermetallic compound phases and $R_f(Fe, T)_gB_{100-(f+g)}$ intermetallic compound phases.